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### (54) PREPARATION OF III-V GROUP COMPOUND SEMICONDUCTOR

(57)Abstract:

PURPOSE: To produce a III-V group compd. semiconductor exhibiting (p) type conduction even if a post-treatment is not applied.

CONSTITUTION: In a pyrolytic vapor growth method of the III-V group compd. semiconductor expressed by the general formula  $\text{In}_x\text{Ga}_y\text{Al}_z\text{N}$  (in the formula,  $0 \leq x \leq 1$ ,  $0 \leq y \leq 1$ ,  $0 \leq z \leq 1$ ,  $x+y+z=1$ ) and containing a (p) type impurity by using an organometallic starting gas, an inactive gas having  $\leq 0.5\text{vol.}\%$  hydrogen concn. is used as a carrier gas, or after etching the inside of a reaction furnace using at least one compd. selected from a group consisting of hydrogen halides, a compd. between a halogen element and a V group element and the compd. of a halogen element, hydrogen and a V group element, the inactive gas having  $\leq 0.5\text{vol.}\%$  hydrogen concn. is used as the carrier gas.

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